

CLAIMS

What is claimed is:

1. A method for designing a zinc finger protein comprising a first (F1), a second (F2), and a third (F3) zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus that binds to a target site comprising, in 3' to 5' direction, a first (S1), a second (S2), and a third (S3) target subsite, each target subsite having the nucleotide sequence GNN, the method comprising the steps of

selecting the F1 zinc finger such that it binds to the S1 target subsite, wherein if S1 comprises GAA, F1 comprises the amino acid sequence QRSNLVR; if S1 comprises GAG, F1 comprises the amino acid sequence RSDNLAR; if S1 comprises GAC, F1 comprises the amino acid sequence DRSNLTR; if S1 comprises GAT, F1 comprises the amino acid sequence QSSNLAR; if S1 comprises GGA, F1 comprises the amino acid sequence QSGHLAR; if S1 comprises GGG, F1 comprises the amino acid sequence RSDHLAR; if S1 comprises GGC, F1 comprises the amino acid sequence DRSHLRT; if S1 comprises GGT, F1 comprises the amino acid sequence QSSHLTR; if S1 comprises GCA, F1 comprises QSGSLTR; if S1 comprises GCG, F1 comprises RSDDLTR; if S2 comprises GCG, F2 comprises RSDDLQR; if S1 comprises GCC, F1 comprises ERGTLAR; if S1 comprises GCT, F1 comprises the amino acid sequence QSSDLTR; if S1 comprises GTA, F1 comprises the amino acid sequence QSGALTR; if S1 comprises GTG, F1 comprises the amino acid sequence RSDALTR; if S1 comprises GTC, F1 comprises the amino acid sequence DRSALAR;

selecting the F2 zinc finger such that it binds to the S2 target subsite, wherein S2 comprises GAA, F2 comprises the amino acid sequence QSGNLAR; if S2 comprises GAG, F2 comprises the amino acid sequence RSDNLAR; if S2 comprises GAC, F2 comprises the amino acid sequence DRSNLTR; if S2 comprises GAT, F2 comprises the amino acid sequence TSGNLVR; if S2 comprises GGA, F2 comprises the amino acid sequence QSGHLQR; if S2 comprises GGG, F2 comprises the amino acid sequence RSDHLAR; if S2 comprises GGC, F2 comprises the amino acid sequence DRSHLAR; if S2 comprises GGT, F2 comprises the amino acid sequence TSGHLAR; if S2 comprises GCA, F2 comprises the amino acid sequence QSGDLTR; if S2 comprises GCC, F2 comprises the amino acid sequence DRSDLTR; if S2 comprises GCT, F2 comprises the

5 selecting the F3 zinc finger such that it binds to the S3 target subsite, wherein if  
S3 comprises GAA, F3 comprises the amino acid sequence QSGNLR; if S3 comprises  
GAG, F3 comprises the amino acid sequence RSDNLTR; if S3 comprises GAC, F3  
comprises the amino acid sequence DRSNLTR; if S3 comprises GAT, F3 comprises the  
amino acid sequence TSANLSR; if S3 comprises GGA, F3 comprises the amino acid  
10 sequence QSGHLQR; if S3 comprises GGG, F3 comprises RSDHLSR; if S3 comprises  
GGT, F3 comprises the amino acid sequence TSGHLVR; if S3 comprises GCA, F3  
comprises the amino acid sequence QSGDLTR; if S3 comprises GCG, F3 comprises the  
amino acid sequence RSDDLTR; if S3 comprises GCC, F3 comprises the amino acid  
sequence DRSDLTR; if S3 comprises GCT, F3 comprises the amino acid sequence  
5 QSSDLQR; if S3 comprises GTG, F3 comprises RSDALTR; and if S3 comprises GTC,  
F3 comprises the amino acid sequence DRSALAR;

thereby designing a zinc finger protein that binds to a target site.

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